

1                   Cigarette Lighter with Alarm

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3                   **Cross-Reference**

4       This patent application is a continuation-in-part application of US Patent  
5       Application No. 10/316704 filed on 11 December 2002.

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7                   **Field of Invention**

8       The present invention relates to a cigarette lighter and, more particularly,  
9       to a cigarette lighter equipped with an alarm.

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11                  **Background of Invention**

12      US Patent No. 5228848 discloses a conventional cigarette lighter 10 with  
13      message. The cigarette lighter 10 includes a lever 40 that can be pressed  
14      in order to ignite and a switch 50 that can be moved in order to provide a  
15      message. Whenever the lever 40 is pressed, the switch 50 is moved.  
16      That is, every attempt to ignite causes the message to be played once. It  
17      often happens that several attempts are made before ignition is achieved.  
18      Repeating of the message is annoying.

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20      The present invention is therefore intended to obviate or at least alleviate  
21      the problem encountered in prior art.

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23                  **Summary of Invention**

24      It is an objective of the present invention to provide a cigarette lighter  
25      equipped with an alarm for providing only one round of a message every  
26      time the cigarette lighter is opened for use.

1 According to the present invention, a cigarette lighter includes a reservoir  
2 for storing fuel and a head formed on the reservoir. Moreover, the  
3 cigarette lighter includes a valve for releasing the fuel from the reservoir,  
4 a nozzle put in the head for spraying the fuel from the valve, an ignition  
5 device for igniting the fuel sprayed from the nozzle, a cover for covering  
6 the head and an alarm for providing only one round of a message every  
7 time the cover is lifted.

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9 Other objects, advantages, and novel features of the invention will  
10 become more apparent from the following detailed description when  
11 taken in conjunction with the attached drawings.

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13 **Brief Description of Drawings**

14 Figure 1 is a perspective view of a cigarette lighter equipped with an  
15 alarm according to the preferred embodiment of the present invention.

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17 Figure 2 is an exploded view of the cigarette lighter shown in Figure 1.

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19 Figure 3 is a cutaway view of the cigarette lighter shown in Figure 1.

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21 Figure 4 is similar to Figure 3 but shows the cigarette lighter in an open  
22 position so that the alarm provides only one round of a message before an  
23 attempt to ignite is made.

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25 Figure 5 is similar to Figure 4 but shows that the round of the message is  
26 stopped and ignition is achieved.

1    **Detailed Description of Preferred Embodiment**

2    Figure 1 shows a cigarette lighter 10 equipped with an alarm 30  
3    according to the preferred embodiment of the present invention.

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5    Referring to Figure 2, the cigarette lighter 10 includes a reservoir 12 for  
6    storing fuel, a head 11 formed on the reservoir 12 and a container 40  
7    integrated with the reservoir 12. Moreover, the cigarette lighter 10  
8    includes a valve 13 for releasing the fuel from the reservoir 12, a lever 14  
9    for controlling the valve 13, a nozzle 16 for spraying the fuel from the  
10   valve 13, an ignition device 15 for igniting the fuel sprayed from the  
11   nozzle 16, a cover 21 for controlling the head 11 and an alarm 30.

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13   The ignition device 15 includes a body 24, a button 26 in the form of a  
14   plunger extending into the body 24 and an electrode 28 extending from  
15   the body 24 to the vicinity of the nozzle 16. In the body 24 is arranged a  
16   circuit (not shown) from which the electrode 28 extends. When the  
17   button 26 is pushed, a voltage is produced by means of the circuit. Thus,  
18   an electric arc appears between the electrode 28 and the nozzle 16.

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20   On the button 26 is installed an external button 23 for contact with a  
21   user's thumb. A rod 25 extends from the external button 23.

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23   The cover 21 includes two ears 42 extending from a side. A collar 44 is  
24   installed on the head 11. The collar 44 includes two ears 46 extending  
25   from a side. The ears 42 are pivotally connected with the ears 46 by  
26   means of a pin 50. The cover 21 defines, in an edge, a hole 27 in which

1 the rod 25 can be fit so as to keep the cover 21 closing the collar 44. A  
2 torque spring 29 is installed on the pin 50 for snap-opening the cover 21.

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4 The alarm 30 includes a switch 31 installed on the collar 44 between the  
5 ears 46, a circuit board 35 put in the container 40 and a wire 36 leading to  
6 the switch 31 from the circuit board 35. A chip 32, a speaker 33 and a  
7 battery 34 are installed on the circuit board 35. The chip 32 and the  
8 speaker 33 are powered by means of the battery 34. When the circuit  
9 board 35 is put in the container 40, the speaker 33 is aligned with an  
10 aperture (not numbered) that is defined in the container 40 and is covered  
11 by means of a screen 19.

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13 Referring to Figure 3, the collar 44 is closed by means of the cover 21 as  
14 the rod 25 is fit in the hole 27.

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16 Referring to Figure 4, the external button 23 can be pushed so as to pull  
17 the rod 25 from the hole 27. The cover 21 is snap-opened by means of  
18 the torque spring 29. The switch 31 is pushed by means of the ears 42  
19 so that a round of a message is played through the speaker 33.

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21 Referring to Figure 5, the external button 23 can be pushed hard so as to  
22 push the button 26 in order to ignite. No matter how many times the  
23 external button 23 is pushed hard for ignition, no round of the message  
24 will be played since the switch 31 is not connected with the external  
25 button 23 in any way.

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1 The present invention has been described through detailed illustration of  
2 the preferred embodiment. Those skilled in the art can derive many  
3 variations from the preferred embodiment without departing from the  
4 scope of the present invention. Therefore, the preferred embodiment  
5 shall not limit the scope of the present invention. The scope of the  
6 present invention is defined in the attached claims.

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